

## Remarks

### **I. Introduction**

Claim 1 is pending in the present application. In view of the foregoing amendment, it is respectfully submitted that the presently pending claim is allowable, and reconsideration is respectfully requested.

### **II. Rejection of Claim 1 Under 35 U.S.C. 112, Second Paragraph**

Claim 1 was rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regards as the invention. It is respectfully maintained that claim 1 is not indefinite and request that the §112 rejection be withdrawn.

Claim 1 relates to a method for manufacturing a pleated filter material from a thermally bonded non-woven fabric. Claim 1 recites that the method includes the step of forming a single fibrous web from undrawn and drawn synthetic fibers. In addition, claim 1 recites that the method includes the step of preheating the fibrous web. Claim 1 recites that the method includes the step of calendering the single fibrous web between non-heated profiled calender rolls in a single calendering step without subsequent re-heating. Furthermore, claim 1 has been amended herein without prejudice to recite that, during the single calendering step, the undrawn fibers in the single fibrous web form bonds in a tension-free manner between non-heated profiled calender rolls to form the non-woven fabric. Support for this amendment may be found, for example, at page 4, line 37 – page 5, line 1, of the Specification which states that “the fibrous web is bonded . . . between the profiled calender rolls 1.” Emphasis added. Claim 1 has been amended herein without prejudice to recite that the bonds of the non woven fabric are of equal strength over its cross-section. Support for this amendment may be found, for example, at page 1, line 17 – page 2, line 3, of the Specification which states that:

“synthetic non woven fabrics are known on the market, for use as a pleatable filter media, in which *parts of the non woven fabric surface are bonded more strongly over the cross section than the remainder of the non woven fabric surface*. A stiffening, three dimensional structure results, which can be described as having spacers. The disadvantage of such media is that the local bondings result in perceptible inhomogeneities which negatively influence the separating properties of the entire filter medium.” Emphasis added.

Thus, the Specification states that *known* non woven fabrics suffer from the tendency to have “parts of the non woven fabric surface [that] are bonded more strongly over the cross section than the remainder of the non woven fabric surface.” Thus, in describing its improvement over these known non woven fabrics, the Specification provides for a process that *avoids* having parts of the non woven fabric surface that are bonded more strongly over the cross section than the remainder of the non woven fabric surface, e.g., providing that **the bonds of the non woven fabric are of equal strength over its cross-section**. Claim 1 also recites that the non woven fabric is formed without the use of flat bonding. In addition, claim 1 recites that, during the single calendering step, spacers are formed in the non-woven fabric to thereby form the filter material.

The Office Action states that “[t]his claim is indefinite, because the limitations ‘portion’ and ‘the remainder’ do not have a positive antecedent basis.” Office Action at page 2. Applicants have amended claim 1 so as to delete these terms.

In addition, the Office Action states that “the added limitation reads the ‘portion’ being less bonded than ‘the remainder’ of the web.” Office Action at page 2. The Office Action further states that “[f]or the purpose of examining the added limitation, the added limitation is assumed to require having an equal bonding strength over a cross section of a non-woven fabric . . . This added limitation however has implicitly been considered in the prior office actions, since claim 1 already requires forming a nonwoven fabric “without inhomogeneities over the cross section of the non woven fabric.”” Emphasis in original. Applicant respectfully disagrees, because the recitation that “the bonds of the non woven fabric are of equal strength over its cross-section” is not implicit in the recitation of “without inhomogeneities over the cross section of the non woven fabric.” Rather, there is nothing in any of the prior art references cited in the Office Action, and particularly in the primary cited reference, Yamamoto et al., that discloses or suggests that being “without inhomogeneities” in any way relates to the relative bond strength over the cross-section of the non-woven fiber. On the contrary, and as set forth more fully below, Yamamoto et al. equate being “without inhomogeneities” as having fibers that are uniformly dispersed in water. There is simply no support provided by the Office Action, nor in any of the cited prior art references, that being “without inhomogeneities” in any way relates to the relative bond strength over the cross-section of the non-woven fiber. Rather, it is the present application that describes that being “without inhomogeneities” may relate to the relative bond strength over the cross-section of the non-woven fiber, and as such, the Office Action’s assertion that “[t]his added limitation however has implicitly been considered in the prior office actions, since claim 1

already requires forming a nonwoven fabric “*without inhomogeneities over the cross section of the non woven fabric*” is improper.

Applicants respectfully maintain that, by virtue of these amendments, claim 1 is not indefinite. Therefore, it is respectfully submitted that claim 1 fully complies with the requirements of 35 U.S.C. § 112, second paragraph, and withdrawal of this rejection is respectfully requested.

### **III. Rejection of Claim 1 Under 35 U.S.C. §103(a)**

Claim 1 was finally rejected as being unpatentable under 35 U.S.C. §103(a) over U.S. Patent No 4,496,583 (“Yamamoto”) in view of either U.S. Patent No. 5,232,595 (“Meyer”) or U.S. Patent No. 4,876,007 (“Narou”) and U.S. Patent No. 2,862,542 (“Norton”), and further in view of U.S. Patent No. 4,772,443 (“Thornton et al.”), U.S. Patent No. 5,492,580 and German Patent No. 4,024,053 A1 (collectively “Frank”) and U.S. Patent No. 3,616,167 (“Gosden”). Applicant respectfully submits that the combination of Yamamoto, Meyer, Narou, Norton, Thornton et al., Frank and Gosden does not render obvious the present claims for the following reasons.

Applicant respectfully submits that the combination of Yamamoto, Narou, Norton, Thornton et al., Frank and Gosden does not render obvious claim 1 for at least the reason that the combination of Yamamoto, Narou, Norton, Thornton et al., Frank and Gosden fails to teach or suggest, either separately or in combination, all of the limitations recited in claim 1. For example, the combination of Yamamoto, Narou, Norton, Thornton et al., Frank and Gosden fails to teach or suggest, either separately or in combination, a method for manufacturing a pleated filter material wherein the bonds of the non woven fabric are of equal strength over its cross-section, as recited in claim 1. Specifically, the Specification states that *known* non woven fabrics suffer from the tendency to have “parts of the non woven fabric surface [that] are bonded more strongly over the cross section than the remainder of the non woven fabric surface.” Thus, in describing its improvement over these known non woven fabrics, the Specification provides for a process that *avoids* having parts of the non woven fabric surface that are bonded more strongly over the cross section than the remainder of the non woven fabric surface, e.g., by providing an arrangement in which the bonds of the non woven fabric are of equal strength over its cross-section.

Applicant respectfully maintains that the prior art references, and particularly the primary cited reference of Yamamoto et al., do not disclose or suggest a method for manufacturing a pleated filter material wherein the bonds of the non woven fabric are of equal strength over its cross-section. Rather, Yamamoto et al. describe a “paper-making procedure,” col. 4, line 30. In describing the problems that exist with conventional paper-making processes, Yamamoto et al. state that “[a] length of less than 0.3 mm of the staple fibers may cause the resultant paper-like sheet to exhibit a poor tensile strength and thus

break frequently during the paper-making procedure.” Col. 2, lines 43-46. Yamamoto et al. also state that “a length of more than 20 mm may result in a poor dispersing property of the staple fibers in water due to the fact that the fibers become entangled with each other.” Col. 2, lines 46-49. Yamamoto et al. conclude that “[t]his phenomenon sometimes results in an uneven quality of the resultant paper-like sheet.” Col. 2, lines 49-51. Also, Yamamoto et al. state that “[i]n the process of the present invention, … the length of the drawn polyester staple fibers of 0.3 to 20 mm is effective for enhancing *the uniform suspension property of the fibers in water.*” Emphasis added.

Thus, Yamamoto et al. state that various factors, e.g., staple fibers having lengths greater than 20mm, “may result in *poor dispersing properties of the staple fibers in water* [which] results in an uneven quality of the resultant paper-like sheet.” **Thus, Yamamoto et al. are concerned with, and assert as being the determining factor in whether or not the filter material is even, the dispersing properties of the staple fibers in water.** For example, Yamamoto et al. state in the Background of the Invention, at col. 1, lines 48-51, that “it was found that in the wet paper-making process, conventional polyester staple fibers were *unevenly dispersed in water* and the resultant sheet was frequently broken during the paper-making process [and that] the resultant paper-like sheet was unsatisfactory in quality.” Emphasis added. In setting forth the results of the Examples of the invention, Yamamoto et al. state at col. 6, lines 42-49, that “[f]rom Table 1, it is clear that in Examples 1 through 9 in accordance with the present invention, the cut polyester fibers were *uniformly dispersed in water* and the paper-making procedure could be carried out without breakage of the resultant sheet [such that] the resultant sheet exhibits satisfactory volume fraction, coefficient of air flow resistance, tensile strength, ultimate elongation, touch and appearance.” Emphasis added. In setting forth still further results of the Examples of the invention, Yamamoto et al. state at col. 10, lines 62-68, that “Table 4 clearly shows that … the mixture of the drawn fibers and the undrawn fibers could be *uniformly dispersed in water* and exhibited a good paper-forming property.” Emphasis added.

In contrast, Yamamoto et al. further describe that, when the dispersing properties of the staple fibers in water is not uniform, the properties of the resultant filter material are not satisfactory, e.g., not even. For example, in setting forth the unsatisfactory results of the Comparative Examples of the invention, Yamamoto et al. state at col. 9, lines 15-19, that “[i]n Comparative Example 5, the cut fibers … exhibited a *poor dispersion property* and a poor paper-forming property [such that] the resultant sheet exhibited a stiff touch and a poor tensile strength and a poor collection efficiency.” Emphasis added. In still another example of the unsatisfactory results of the Comparative Examples of the invention, Yamamoto et al. state at col. 9, lines 20-25, that “[i]n Comparative Example 6, the cut fibers … had a *poor dispersion property* and a poor paper-forming property [such that] the resultant sheet exhibited a poor coefficient of air flow resistance of less than 1,000 dyn.s/cm<sup>4</sup>, an

extremely poor collection efficiency and an undesirably stiff touch." As Yamamoto et al. are entirely concerned with the dispersing properties of the staple fibers in water, there is consequently no discussion whatsoever in Yamamoto et al. of the strength of the bonds of the non woven fabric, and more particularly, there is consequently no discussion whatsoever in Yamamoto et al. of the relative strength of the bonds of the non woven fabric, e.g., the bonds of the non woven fabric being of equal strength over its cross-section.

To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Since the combination of Yamamoto, Narou, Norton, Thornton et al., Frank and Gosden does not teach, or even suggest, all of the limitations of claim 1 as more fully set forth above, it is respectfully submitted that the combination of Yamamoto, Narou, Norton, Thornton et al., Frank and Gosden does not render obvious claim 1.

It is respectfully submitted that the cases of In re Fine, supra, and In re Jones, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), make plain that the Office Action's generalized assertions that it would have been obvious to modify or combine the references do not properly support a § 103 rejection. It is respectfully submitted that those cases make plain that the Office Action reflects a subjective "obvious to try" standard, and therefore does not reflect the proper evidence to support an obviousness rejection based on the references relied upon. In particular, the Court in the case of In re Fine stated that:

The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. This it has not done. . . .

. . .

**Instead, the Examiner relies on hindsight in reaching his obviousness determination. . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.**

In re Fine, 5 U.S.P.Q.2d at 1598 to 1600 (citations omitted; italics in original; emphasis added). Likewise, the Court in the case of In re Jones stated that:

Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . . .

**Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill . . . would have been motivated to make the modifications . . . necessary to arrive at the claimed [invention].**

In re Jones, 21 U.S.P.Q.2d at 1943 & 1944 (citations omitted; italics in original).

That is exactly the case here since it is believed and respectfully submitted that the present Final Office Action offers no evidence whatsoever, but only conclusory hindsight, reconstruction and speculation, which these cases have indicated does not constitute evidence that will support a proper obviousness finding. Unsupported assertions are not evidence as to why a person having ordinary skill in the art would be motivated to modify or combine references to provide the claimed subject matter of the claims to address the problems met thereby. Accordingly, the Office must provide proper evidence of a motivation for modifying or combining the references to provide the claimed subject matter.

More recently, the Federal Circuit in the case of In re Kotzab has made plain that even if a claim concerns a “technologically simple concept” — which is not the case here — there still must be some finding as to the “specific understanding or principle within the knowledge of a skilled artisan” that would motivate a person having no knowledge of the claimed subject matter to “make the combination in the manner claimed,” stating that:

In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the manner claimed. In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper prima facie case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.

In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000) (emphasis added). Again, it is believed that there have been no such findings.

In summary, it is respectfully submitted that the combination of Yamamoto, Narou, Norton, Thornton et al., Frank and Gosden does not render obvious claim 1. It is

therefore respectfully submitted that claim 1 is allowable for these reasons, and withdrawal of this rejection with respect to claim 1 is therefore respectfully requested.

**IV. Conclusion**

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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